Listing of Claims

1.   (Currently Amended) A call relaying method, comprising:

communicating messages using at least one of a Bearer Independent Call Control (BICC) protocol, a Media Gateway Control Protocol (MGCP), [[and]] or a 3rd Generation-Inter-Operability Specification (3G-IOS) protocol to induce an external tone gateway to generate a tone; and

relaying a call between an originating gateway controller and a terminating gateway controller using the tone and a modified BICC protocol, wherein the modified BICC protocol induces generation of the tone by transmitting and receiving messages containing connection information between the originating and terminating gateway controllers.

2.   (Currently Amended) The method of claim 1, wherein the messages containing said connection information include ~~modified BICC protocol induces the generation of the tone by transmitting and receiving~~ Application Transport Mechanism (APM) messages ~~multiple times between the originating and terminating gateway controllers~~.

3.   (Original) The method of claim 1, wherein the MGCP protocol is used by the originating and terminating gateway controllers to control resources of the tone gateway.

4.   (Currently Amended) A call relaying method, comprising:

requesting and confirming, with an originating gateway controller, a first resource assignment made by an originating wireless gateway for a core network connection;

searching for a terminating wireless gateway in accordance with a call connection request communicated from the originating gateway controller to a terminating gateway controller;

connecting the terminating gateway controller to a core network;

connecting a tone gateway to the core network using the terminating gateway controller; [[and]]

generating a tone and transmitting the tone to a caller, with the tone gateway; and

connecting a voice call, via the core network connection, between the originating wireless gateway and the terminating wireless gateway.

5.   (Canceled)

6.   (Original) The method of claim 4, wherein connecting the terminal gateway controller to the core network comprises:

requesting a call connection by transmitting an Initial Address Message (IAM) from the originating gateway controller to the terminating gateway controller;

searching for the terminating wireless gateway, connected to a call receiver, by conducting paging request and response operations between the terminating gateway controller and the terminating wireless gateway;

requesting and confirming a second resource assignment at the terminating wireless gateway, using bearer information of the originating wireless gateway included in the transmitted IAM; and

requesting and confirming a radio channel assignment, for the call receiver, with the terminating wireless gateway.

7.   (Original) The method of claim 4, wherein generating the tone comprises:

requesting and confirming a second resource assignment at the tone gateway, using the terminating gateway controller, and transmitting a paging tone to the caller, in accordance with the request of the terminating gateway controller;

confirming a status of a call receiver and notifying the originating gateway controller of the status, with the terminating gateway controller; and

providing a ring back tone to the caller, in accordance with the request of the terminating gateway controller, using the tone gateway.

8.   (Original) The method of claim 7, wherein providing the paging tone comprises:

requesting and confirming the second resource assignment by transmitting a tone connection instruction message to the tone gateway, with the terminating gateway controller;

transmitting a response message including information on an assigned core network connection from the tone gateway to the terminating gateway controller;

transmitting bearer information of the tone gateway by transmitting an Application Transport Mechanism (APM) message from the terminating gateway controller to the originating gateway controller;

requesting and confirming a resource assignment modification by transmitting a modification connection message from the originating gateway controller to the originating wireless gateway and responding to the terminating gateway controller by sending another APM message;

requesting the paging tone by transmitting a notification request message from the terminating gateway controller to the tone gateway; and

transmitting a response message, in response to the notification request message, from the tone gateway to the terminating gateway controller and providing the paging tone to the caller via the originating wireless gateway.

9.   (Original) The method of claim 7, wherein providing the ring back tone comprises:

transmitting a response message to a paging request from the terminating wireless gateway to the terminating gateway controller;

requesting a radio channel resource assignment by transmitting a resource assignment request message from the terminating gateway controller to the terminating wireless gateway;

requesting and confirming the radio channel assignment for the call receiver, with the terminating wireless gateway, and transmitting a response message and an announcement message to the terminating gateway controller;

transmitting an Address Complete Message (ACM) from the terminating gateway controller to the originating gateway controller and requesting the ring back tone by transmitting a notification request message to the tone gateway; and

transmitting a response message, in response to the notification request message, from the tone gateway to the terminating gateway controller and providing the ring back tone to the caller via the originating wireless gateway.

10.   (Currently Amended) The method of claim 1 [[5]], wherein connecting the voice call comprises:

transmitting an access message from the terminating wireless gateway to the terminating gateway controller to signify a call receiver has responded to the voice call;

transmitting an Answer Message (ANM) from the terminating gateway controller to the originating gateway controller;

requesting and confirming a second resource assignment by transmitting a connection instruction message from the terminating gateway controller to the terminating wireless gateway;

transmitting a response message, including information on an assigned core network connection, from the terminating wireless gateway to the terminating gateway controller;

transmitting the information on the core network connection, of the terminating wireless gateway, by transmitting an APM message from the terminating gateway controller to the originating gateway controller;

transmitting a modification access message from the originating gateway controller to the originating wireless gateway and responding to the terminating gateway controller, through another APM message, after receiving a response message for the modification access message; and

establishing the voice call, via the core network connection between the originating wireless gateway and the terminating wireless gateway.

11.   (Original) The method of claim 10, wherein the ANM is a return message indicating that the call receiver responded to the voice call and initiates the imposition of a service charge on the caller, in the case of a domestic call, or a measurement of a communication time, for the calculation of an international service charge, in the case of an international call.

12.   (Currently Amended) A call relaying system, comprising:

an originating wireless gateway that conducts modifications to a first resource assignment of an originating side, according to a first resource assignment modification instruction, and transmits information on a modified core network connection;

a terminating wireless gateway that conducts a second resource assignment of a terminating side, according to a second resource assignment instruction, and transmits information on an assigned core network connection;

a tone gateway that transmits information on the assigned core network connection, according to the second resource assignment instruction, and provides a tone according to a tone provision instruction;

a terminating gateway controller that communicates with the tone gateway and the terminating wireless gateway; and

an originating gateway controller that communicates with the terminating gateway controller and the originating wireless gateway, wherein the originating and terminating gateway controllers control a call relay using a Bearer Independent Call Control (BICC) protocol which induces the tone gateway to provide the tone based on the tone provision instruction.

13.   (Original) The system of claim 12, wherein:

the terminating gateway controller instructs and confirms the second resource assignment at the tone gateway, transmits an Application Transport Mechanism (APM) message, requests and confirms the tone gateway=s tone provision, requests and confirms the second resource assignment at the terminating wireless gateway, and transmits another APM message; and

the originating gateway controller requests and confirms the modification of the first resource assignment according to the APM message of the terminating gateway controller and responds to the terminating gateway controller.

14.   (Original) The system of claim 12, wherein a protocol stack between the originating and terminating gateway controllers and the tone gateway contains a Media Gateway Control Protocol (MGCP), an Internet Protocol (IP), and a Transfer Control Protocol (TCP) or an Asynchronous Transfer Mode (ATM).

15.   (Original) The system of claim 12, wherein the originating and terminating gateway controllers, the originating and terminating wireless gateways, and the tone gateway are connected with one another via a core network, using the IP.

16.   (Canceled)

17.   (Original) The system of claim 12, wherein the origination and terminating gateway controllers use a Media Gateway Control Protocol (MGCP) to control resources of the originating and terminating wireless gateways and the tone gateway.

18.   (New) A method for connecting a call, comprising:

receiving a tone request message;

sending a paging tone signal from a first gateway to a second gateway in response to the tone request message; and

relaying a call between a controller of the second gateway and a controller of a third gateway based on the paging tone signal.

19.   (New) The method of claim 18, wherein the tone request message is generated based on messages communicated in a Bearer Independent Call Control (BICC) protocol between the second and third gateway controllers.

20.   (New) The method of claim 19, wherein the BICC messages include BICC Application Transport Mechanism (APM) messages.

21.   (New) The method of claim 18, wherein the paging tone signal is sent to the second gateway through a core network and bypasses the second and third gateway controllers.

22.   (New) The method of claim 18, wherein the paging tone signal is sent to the second gateway through a VoIP signal path.

23.   (New) The method of claim 18, wherein the first gateway is a tone gateway, the second gateway an originating wireless gateway, and the third gateway is a terminating wireless gateway.

24.   (New) The method of claim 18, wherein the paging tone signal corresponds to a pre-defined tone identified based on information in the tone request message.

25.   (New) The method of claim 18, further comprising:

receiving a ring back tone request message; and

sending a ring back tone signal from the first gateway to the second gateway in response to the ring back tone request message.

26.   (New) The method of claim 25, wherein the ring back tone request message is generated after the third gateway controller sends the second gateway controller a BICC message indicating that address information for connecting the call has been received.